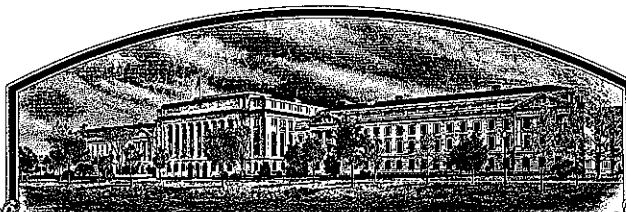


No.

9600088



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Agripro Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'WI88-052-13'



Attest:

Marsha A. Stamp
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

*In Testimony Whereof, I have herunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed at
the City of Washington, D.C. this twenty-ninth
day of March in the year of our Lord
one thousand nine hundred and ninety-six.*

Samuel J. Phillips
Secretary of Agriculture


U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Hybritech US, a Monsanto Company Agripro Seeds, Inc. CGM 01 Jun 1998		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER WI88-052-13	3. VARIETY NAME WI88-052-13
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 6700 Antioch P.O. Box 2962 Shawnee Mission, Kansas 66201-1362		5. TELEPHONE (include area code) 913-384-4940	FOR OFFICIAL USE ONLY PVPO NUMBER 9600088 DATE Dec. 14, 1995
		6. FAX (include area code) 913-384-0208	
7. GENUS AND SPECIES NAME Triticum aestivum	8. FAMILY NAME (Botanical) Gramineae		FILING AND EXAMINATION FEE F E S DATE Dec. 14, 1995
9. CROP KIND NAME (Common name) Hard Red Winter Wheat			CERTIFICATION FEE E I V DATE 2-21-96
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name) Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION June 1994	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Robert Bruns 806 N. Second Street P.O. Box 30 Berthoud, Colorado 80513 OR Christine Bruns Berthoud, CO 80513			14. TELEPHONE (include area code) 970-532-3721 316 755 7007 15. FAX (include area code) 970-532-2035 316 755 0072
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act?) <input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES (If "yes," give names of countries and dates) <input type="checkbox"/> NO			
21. Hybrid made with WI88-052-13 commercially sold in August 1995 in the USA			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s)) 		SIGNATURE OF APPLICANT (Owner(s))	
NAME (Please print or type) Robert Bruns		NAME (Please print or type)	
CAPACITY OR TITLE General Manager-Wheat Research	DATE and Product	CAPACITY OR TITLE Development	DATE 11-20-95

Mark J. Messmer
Hybritech US
5912 North Meridian
Wichita KS 67204
email: Mark.J.Messmer@Monsanto.Com
CGM 01 Jun 1998

EXHIBIT A.

ORIGIN AND BREEDING HISTORY OF WI88-052-13

WI88-052 was an F3 derived single plant selection from the cross Era / Tobari 66 // Lovrin 11 /3/ Oligoculm /4/ Archer /5/ W81-171 (Mesa Mother-line). The cross was made in 1983 and the plant selection was made in Berthoud, Colorado in 1986. The resulting F4 plant row was tested in preliminary yield trials in 1988 and 1989. WI88-052 was head-rowed in 1990. Twelve head-rows were selected on the basis of phenotypic uniformity and planted as progeny plots in 1991. Three F7 progeny plots were selected and bulked on the basis of foliar disease resistance, height and maturity and subsequently tested under the designation WI88-052-13. WI88-052-13 has been tested both as a pure-line and as a hybrid parent in many hybrid combinations from 1990 through 1995. These replicated trials represent a broad geographic area in the Hard Winter Wheat region.

In 1990, 48 head-rows were grown in Berthoud, Colorado. Twelve of these rows were individually harvested and grown as progeny plots in 1991. Three of these plots were selected on the basis of foliar disease resistance, plant height and maturity. These progeny plots were bulked to plant a 2.25 acre breeder seed increase in 1993 which produced 8,700 pounds of breeder seed. In 1994, 1,800 bushels of foundation seed was produced in Berthoud, Colorado.

WI88-052-13 has been uniform and stable since 1991. Less than 0.5% of the plants were rogued from the initial seed increase in 1993. Approximately 75% of the rogued variant plants were taller height (5 to 15 cm's), 12% were darker green plant color at boot stage, and 3% were awnless. Up to 1% total variant plants may be encountered in subsequent generations.

EXHIBIT B.**STATEMENT OF DISTINCTNESS**

WI88-052-13 is most similar to the hard red winter wheat 'Abilene'. However it can be distinguished by the following morphological characteristic:

- WI88-052-13 has a green plant color (Royal Horticultural Society color fan #137-B) at boot stage (Berthoud, Colorado 1993, 1994, and 1995). Abilene has a blue-green plant color (Royal Horticultural Society color fan #122-B) at boot stage (Berthoud, Colorado 1993, 1994, and 1995).

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*Triticum* Spp.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S) Agripro Seeds, Inc.	FOR OFFICIAL USE ONLY
ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 6700 Antioch P.O. Box 2962 Shawnee Mission, Kansas 66201-1362	PVPO NUMBER 9600088 VARIETY NAME OR TEMPORARY DESIGNATION WI88-052-13

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in the first box (e.g. or) when number is either 99 or less or 9 or less.

1. KIND:

1 = COMMON 2 = DURUM 3 = CLUB 4 = OTHER (SPECIFY) _____

2. VERNALIZATION:

1 = SPRING 2 = WINTER 3 = OTHER (SPECIFY) _____

3. COLEOPTILE ANTHOCYANIN:

1 = ABSENT 2 = PRESENT

4. JUVENILE PLANT GROWTH:

1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

5. PLANT COLOR (boot stage):

1 = YELLOW-GREEN 2 = GREEN 3 = BLUE-GREEN

6. FLAG LEAF (boot stage):

1 = ERECT 2 = RECURVED

1 = NOT TWISTED 2 = TWISTED

7. EAR EMERGENCE:

NUMBER OF DAYS EARLIER THAN Abilene *

NUMBER OF DAYS LATER THAN *

8. ANTHOR COLOR:

1 = YELLOW 2 = PURPLE

9. PLANT HEIGHT (from soil to top of head, excluding awns)

cm. Equal in height to Hickok *

cm. SHORTER THAN *

* Relative to a PVP-approved commercial variety grown in the same trial.

10. STEM:**A. ANTHOCYANIN**☒ 1

1 = ABSENT 2 = PRESENT

B. WAXY BLOOM☒ 2

1 = ABSENT 2 = PRESENT

C. HAIRINESS (last internode of rachis)☒ 2

1 = ABSENT 2 = PRESENT

D. INTERNODE (specify number) _____☒ 1

1 = HOLLOW 2 = SEMI-SOLID 3 = SOLID

E. PEDUNCLE☒ 1

1 = ERECT 2 = RECURVED

☒ 3☒ 1

cm. PEDUNCLE LENGTH (as measured from upper node to last rachis internode)

11. HEAD (at Maturity):**A. DENSITY**☒ 2

1 = LAX 2 = MIDDENSE 3 = DENSE

B. SHAPE☒ 1

1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (specify) _____

C. CURVATURE☒ 1

1 = ERECT 2 = INCLINED 3 = RECURVED

D. AWNEDNESS☒ 4

1 = AWNLESS 2 = APICALLY AWNLETTERED 3 = AWNLETTERED 4 = AWNED

12. GLUMES (at Maturity):**A. COLOR**☒ 1

1 = WHITE 2 = TAN 3 = OTHER (specify) _____

B. SHOULDER☒ 2

1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

C. BEAK☒ 3

1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

D. LENGTH☒ 2

1 = SHORT (ca. 7mm) 2 = MEDIUM (ca. 8mm) 3 = LONG (ca. 9mm)

E. WIDTH☒ 1

1 = NARROW (ca. 3mm) 2 = MEDIUM (ca. 3.5mm) 3 = WIDE (ca. 4mm)

13. SEED:

A. SHAPE

☐ 1

1 = OVATE 2 = OVAL 3 = ELLIPTICAL

B. CHEEK

☐ 1

1 = ROUNDED 2 = ANGULAR

C. BRUSH

☐ 2

1 = SHORT 2 = MEDIUM 3 = LONG

☐ 1

1 = NOT COLLARED 2 = COLLARED

D. CREASE

☐ 11 = WIDTH 60% OR LESS OF KERNEL
2 = WIDTH 80% OR LESS OF KERNEL
3 = WIDTH NEARLY AS WIDE AS KERNEL☐ 11 = DEPTH 20% OR LESS OF KERNEL
2 = DEPTH 35% OR LESS OF KERNEL
3 = DEPTH 50% OR LESS OF KERNEL

E. COLOR

☐ 3

1 = WHITE 2 = AMBER 3 = RED 4 = OTHER (specify) _____

F. TEXTURE

☐ 1

1 = HARD 2 = SOFT

G. PHENOL REACTION (see instructions)

☐ ---1 = IVORY 2 = FAWN 3 = LIGHT BROWN
4 = DARK BROWN 5 = BLACK14. DISEASE: (0 = NOT TESTED; 1 = SUSCEPTIBLE; 2 = RESISTANT) 3 = Moderately resistant
4 = Moderately susceptible☐ 3STEM RUST
(Res. genes) _____☐ 0STRIPE RUST
(Res. genes) _____☐ 3MILDEW
(Res. genes) _____☐ 0*Septoria nodorum*
(Res. genes) _____☐ 0BYDV
(Res. genes) _____☐ 2SBMV
(Res. genes) _____☐

OTHER _____

☐ 3LEAF RUST
(Res. genes) _____☐ 0LOOSE SMUT
(Res. genes) _____☐ 0BUNT
(Res. genes) _____☐ 0*Septoria tritici*
(Res. genes) _____☐ 4WSMV
(Res. genes) _____☐ 3SSMV
(Res. genes) _____

15. INSECT: (0 = NOT TESTED; 1 = SUSCEPTIBLE; 2 = RESISTANT) 3 = Moderately resistant
4 = Moderately susceptible

☐ 1

HESSIAN FLY (Res. genes) _____

☐ 0

STEM SAWFLY (Res. genes) _____

☐ 0

CEREAL LEAF BEETLE (Res. genes) _____

☐ 0

APHIDS (Res. genes) _____

☐ 0

GREENBUG (Res. genes) _____

☐ 0

RUSSIAN APHID (Res. genes) _____

☐

OTHER (specify) _____

EXHIBIT D.**ADDITIONAL DESCRIPTION OF WI88-052-13**

WI88-052-13 is a hard red winter wheat bred and developed by Agripro Seeds, Inc. for use as a parent in hybrid combination. See Exhibit F. for agronomic and disease characterization and documentation.

Juvenile growth habit is semi-erect. Plant color at boot stage is green. Flag leaf at boot stage is erect and twisted. Auricle anthocyanin and auricle hairs are present. Head shape is tapering, middense, and awned. Plant color at maturity is white. Glumes are glabrous, medium in length and narrow in width with acuminate beaks. Shoulder shape on the glume is oblique. Seed shape is ovate with rounded cheeks and medium brush length. Seed crease is shallow in depth and narrow in width.

EXHIBIT F.**QUALITY AND AGRONOMIC DATA**

Quality data page 1.

Agonomic data page 2.

Agripro Seeds, Inc. Hard Winter Wheat Data Summary

Var./Line	Heading	Maturity	Coleoptile	Height	Straw Strength	Leaf Rust Severity	Leaf Rust Reaction	Stem Rust Severity	Stem Rust Reaction	Powdery Mildew	Hessian fly	WSMV	SBMV	SSMV
WI88-052-13	5	4.5	3	3	2	2	2	2	5	3	9	5	3	3
Abilene	6	6	5	3	2	8	8	6	5	8	9	6	3	4

Data generated in 1988:

Berthoud, CO - Yield, Test Wt., Height, Lodging Severity (straw strength), Maturity, Pollination, Hessian fly (grmhse. screening) Powdery Mildew, Leaf Rust, Stem Rust (grmhse. screening)
Salina, KS - Yield, Test Wt.
Everest, KS - Soilborne Mosaic

Data generated in 1989:

Berthoud, CO - Yield, Test Wt., Height, Heading Date, Stem Rust (grmhse. & field), Leaf Rust (grmhse)
Nardin, OK - Yield, Test Wt., Height, Maturity, Lodging Severity (straw strength), Leaf Rust (field)
Garden City, KS - Yield, Test Wt.
Geneva, NE - Yield, Test Wt., Height

Data generated in 1990:

Berthoud, CO - Height, Heading, Anthesis, Coleoptile (grmhse. screening)
Dumas, TX - Growth habit, Heading
Salina, KS - Leaf Rust
Grant, NE - Soilborne
Hays, KS - WSMV (Visual screening - Dr.T.J Martin).

Data generated in 1991:

Berthoud, CO - Heading, Pollination, Leaf Rust
Dumas, TX - Heading
Wichita, KS - Heading, Leaf Rust
Everest, KS - Soilborne, Spindle Streak
Salina, KS - Leaf Rust
Imperial, NE - Leaf Rust
Hays, KS - WSMV (Visual screening - Dr.T.J Martin).

Data generated in 1992:

Berthoud, CO - Yield, Test Wt., Heading, Height, Pollination, Greenhouse Screening for:
Coleoptile, Tan Spot, Powdery Mildew, and Hessian fly
Salina KS - Yield, Test Wt.,
Rome, KS - Spindle Streak
Hays, KS - WSMV (Visual screening - Dr.T.J Martin).

Data generated in 1993:

Berthoud, CO - Yield, Test Wt., Heading, Pollination, Maturity, Height
Garden City, KS - Yield, Test Wt.
Geneva, NE - Soilborne
Broken Bow, NE - Winterhardiness
Dumas, TX - Yield, Test Wt.

Data generated in 1994:

Berthoud, CO - Yield, Test Wt., Heading, Pollination, Maturity, Height,
Leaf Rust (grmhse screening)
Garden City, KS - Yield, Test Wt., Leaf Rust
Geneva, NE - Soilborne
Broken Bow, NE - Winterhardiness
Dumas, TX - Yield, Test Wt.
Hereford, TX - Heading
Hays, KS - WSMV (Visual screening).

Data generated in 1995:

Berthoud, CO - Yield, Test Wt., Heading, Leaf Rust, Lodging Severity,
Powdery mildew
Goodland, KS - Yield, Test Wt., Lodging Severity
Beloit, KS - Yield, Test Wt., Tan Spot
Salina, KS - Heading, Septoria
Everest, KS - Spindle Streak
Saint John, KS - Spindle Streak
Dumas, TX - Test Wt.
Wichita, KS - Leaf Rust, Tan Spot

Note: Rankings in this table represent the average for a given trait on a 1-9 scale where 1 and 9 represent the extremes for the respective traits.

Trait	1	9
Heading	early	late
Maturity	early	late
Coleoptile	long	short
Height	short	tall
Straw Strength	strong	weak
All disease & insect ratings	resistant	susceptible

EXHIBIT E.**STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP**

The variety for which Plant Variety Protection is hereby sought was developed by Dr. John Moffatt, an employee of Agripro Seeds, Inc. By agreement between employees and Agripro Seeds, Inc., all rights to any invention, discovery, or development made by the employee while employed by Agripro Seeds, Inc., were assigned to Agripro Seeds, Inc., with no rights of any kind pertaining to WI88-052-13 being retained by the employees.